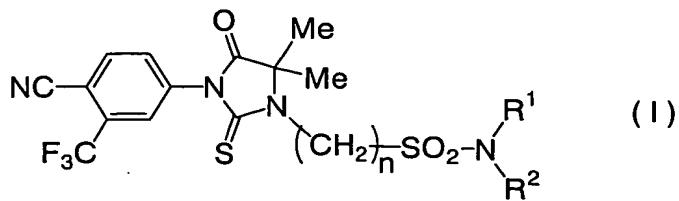


CLAIMS

[1] A compound represented by formula (I):

[Formula 1]



5

wherein n is an integer selected from 1 to 20, and R<sup>1</sup> and R<sup>2</sup>, which may be the same or different, each represent a hydrogen atom or a linear or branched C<sub>1</sub>-C<sub>6</sub> alkyl group, or a salt, a prodrug or a solvate thereof.

10 [2] A compound according to claim 1 or a salt, a prodrug or a solvate thereof, wherein n is an integer selected from 1 to 10.

[3] A compound according to claim 1 or 2 or a salt, a prodrug or a solvate thereof, wherein R<sup>1</sup> and R<sup>2</sup> are each a 15 hydrogen atom.

[4] A compound according to any one of claims 1 to 3 or a salt, a prodrug or a solvate thereof, wherein at least one of R<sup>1</sup> and R<sup>2</sup> is a methyl group.

[5] A compound according to any one of claims 1 to 4, 20 which is selected from the group consisting of:

4-[3'-(3"-aminosulfonylpropyl)-4',4'-dimethyl-5'-oxo-2'-thioxo-1'-imidazolidinyl]-2-trifluoromethylbenzonitrile;

4-[3'-(4"-aminosulfonylbutyl)-4',4'-dimethyl-5'-oxo-2'-thioxo-1'-imidazolidinyl]-2-trifluoromethylbenzonitrile;

4-[3'-(6"-aminosulfonylhexyl)-4',4'-dimethyl-5'-oxo-  
2'-thioxo-1'-imidazolidinyl]-2-trifluoromethylbenzonitrile;  
4-[3'-(7"-aminosulfonylheptyl)-4',4'-dimethyl-5'-oxo-  
2'-thioxo-1'-imidazolidinyl]-2-trifluoromethylbenzonitrile;  
5 4-[3'-(8"-aminosulfonyloctyl)-4',4'-dimethyl-5'-oxo-  
2'-thioxo-1'-imidazolidinyl]-2-trifluoromethylbenzonitrile;  
4-[3'-(9"-aminosulfonylnonyl)-4',4'-dimethyl-5'-oxo-  
2'-thioxo-1'-imidazolidinyl]-2-trifluoromethylbenzonitrile;  
4-[3'-(5"-aminosulfonylpentyl)-4',4'-dimethyl-5'-oxo-  
10 2'-thioxo-1'-imidazolidinyl]-2-trifluoromethylbenzonitrile;  
4-[3'-(4"-N,N-dimethylaminosulfonylbutyl)-4',4'-  
dimethyl-5'-oxo-2'-thioxo-1'-imidazolidinyl]-2-  
trifluoromethylbenzonitrile;  
4-[3'-(3"-N,N-dimethylaminosulfonylpropyl)-4',4'-  
15 dimethyl-5'-oxo-2'-thioxo-1'-imidazolidinyl]-2-  
trifluoromethylbenzonitrile;  
4-[3'-(5"-N,N-dimethylaminosulfonylpentyl)-4',4'-  
dimethyl-5'-oxo-2'-thioxo-1'-imidazolidinyl]-2-  
trifluoromethylbenzonitrile;  
20 4-[3'-(6"-N,N-dimethylaminosulfonylhexyl)-4',4'-  
dimethyl-5'-oxo-2'-thioxo-1'-imidazolidinyl]-2-  
trifluoromethylbenzonitrile;  
4-[3'-(7"-N,N-dimethylaminosulfonylheptyl)-4',4'-  
25 dimethyl-5'-oxo-2'-thioxo-1'-imidazolidinyl]-2-  
trifluoromethylbenzonitrile;  
4-[3'-(8"-N,N-dimethylaminosulfonyloctyl)-4',4'-  
dimethyl-5'-oxo-2'-thioxo-1'-imidazolidinyl]-2-

4-[3'-(9"-N,N-dimethylaminosulfonylnonyl)-4',4'-dimethyl-5'-oxo-2'-thioxo-1'-imidazolidinyl]-2-trifluoromethylbenzonitrile;

4-[3'-(3"-N-methylaminosulfonylpropyl)-4',4'-dimethyl-5'-oxo-2'-thioxo-1'-imidazolidinyl]-2-trifluoromethylbenzonitrile;

4-[3'-(4"-N-methylaminosulfonylbutyl)-4',4'-dimethyl-5'-oxo-2'-thioxo-1'-imidazolidinyl]-2-trifluoromethylbenzonitrile;

4-[3'-(5"-N-methylaminosulfonylpentyl)-4',4'-dimethyl-5'-oxo-2'-thioxo-1'-imidazolidinyl]-2-trifluoromethylbenzonitrile; and

4-[3'-(2"-aminosulfonylethyl)-4',4'-dimethyl-5'-oxo-2'-thioxo-1'-imidazolidinyl]-2-trifluoromethylbenzonitrile  
15 or a salt, a prodrug or a solvate thereof.

[6] A drug which comprises the compound according to any one of claims 1 to 5 or a salt, a prodrug or a solvate thereof as an active ingredient.

[7] A pharmaceutical composition which comprises the compound according to any one of claims 1 to 5 or a salt, a prodrug or a solvate thereof as an active ingredient.

[8] An anti-androgen agent which comprises the compound according to any one of claims 1 to 5 or a salt, a prodrug or a solvate thereof as an active ingredient.

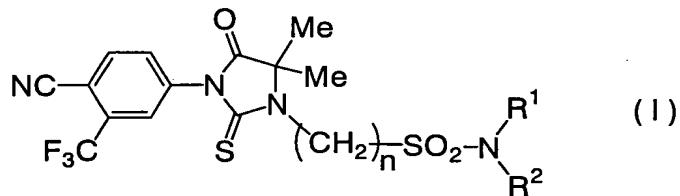
25 [9] A prophylactic or therapeutic agent for a disease selected from prostate cancer, benign prostatic hypertrophy, male pattern baldness, sexual precociousness, common acne, seborrhea and hypertrichosis, which comprises

the compound according to any one of claims 1 to 5 or a salt, a prodrug or a solvate thereof as an active ingredient.

[10] The use of the compound according to any one of 5 claims 1 to 5 or a salt, a prodrug or a solvate thereof in manufacturing a medicament used as an androgen receptor antagonist.

[11] A process for preparing a compound represented by formula (I):

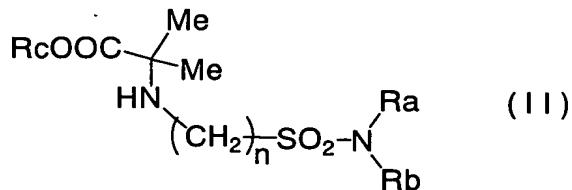
10 [Formula 2]



wherein n, R<sup>1</sup> and R<sup>2</sup> are as defined in claim 1, which comprises the steps of:

reacting a compound represented by formula (II):

15 [Formula 3]



wherein

n is an integer selected from 1 to 20;

20 Ra and Rb, which may be the same or different, are each selected from the group consisting of a linear or

branched C<sub>1</sub>-C<sub>6</sub> alkyl group substituted with one or more W<sup>1</sup>,  
a linear or branched C<sub>1</sub>-C<sub>6</sub> alkylcarbonyl group which may be  
substituted with one or more W<sup>1</sup>, an arylcarbonyl group  
which may be substituted with one or more W<sup>2</sup>, a linear or  
5 branched C<sub>1</sub>-C<sub>6</sub> alkoxy carbonyl group which may be substituted  
with one or more W<sup>1</sup>, an aryloxy carbonyl group which may be  
substituted with one or more W<sup>2</sup>, a linear or branched C<sub>1</sub>-C<sub>6</sub>  
alkylaminocarbonyl group which may be substituted with one  
or more W<sup>1</sup>, a linear or branched C<sub>1</sub>-C<sub>6</sub> dialkylaminocarbonyl  
10 group which may be substituted with one or more W<sup>1</sup>, a  
linear or branched C<sub>1</sub>-C<sub>6</sub> alkylsulfonyl group which may be  
substituted with one or more W<sup>1</sup>, an arylsulfonyl group  
which may be substituted with one or more W<sup>2</sup>, and R<sup>1</sup> and R<sup>2</sup>;  
or

15        Ra and Rb may be joined together to form a group  
=CH-W<sup>3</sup>;

W<sup>1</sup> is a linear or branched C<sub>1</sub>-C<sub>6</sub> alkoxy group, a  
linear or branched C<sub>1</sub>-C<sub>6</sub> alkylthio group, a linear or  
branched C<sub>1</sub>-C<sub>6</sub> alkylsulfinyl group, a linear or branched  
20 C<sub>1</sub>-C<sub>6</sub> alkylsulfonyl group, an aryl group which may be  
substituted with one or more W<sup>2</sup>, an aryloxy group which may  
be substituted with one or more W<sup>2</sup>, or a C<sub>1</sub>-C<sub>3</sub> aralkyloxy  
group which may be substituted with one or more W<sup>2</sup>;

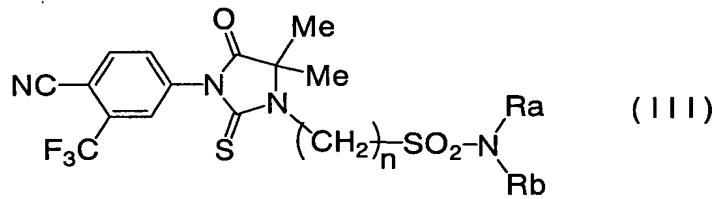
25        W<sup>2</sup> is a linear or branched C<sub>1</sub>-C<sub>6</sub> alkyl group, a linear  
or branched C<sub>1</sub>-C<sub>6</sub> alkoxy group, a linear or branched C<sub>1</sub>-C<sub>6</sub>  
haloalkyl group, a halogen atom, a cyano group, or a nitro  
group;

W<sup>3</sup> is a linear or branched C<sub>1</sub>-C<sub>6</sub> alkyl group, a linear

or branched C<sub>1</sub>-C<sub>6</sub> alkoxy group, a linear or branched C<sub>1</sub>-C<sub>6</sub> alkylamino group, or a linear or branched C<sub>1</sub>-C<sub>6</sub> dialkylamino group;

5 R<sup>1</sup> and R<sup>2</sup> are as defined in claim 1; and  
Rc is a linear or branched C<sub>1</sub>-C<sub>6</sub> alkyl group  
with 4-cyano-3-trifluoromethylphenyl isothiocyanate to  
obtain a compound represented by formula (III):

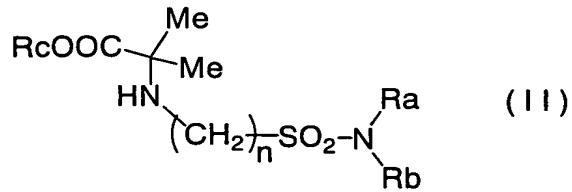
[Formula 4]



10 wherein n, Ra and Rb are as defined above; and  
a deprotection in cases where at least one of the  
groups Ra and Rb is other than R<sup>1</sup> and R<sup>2</sup>.

[12] A compound represented by formula (II):

[Formula 5]

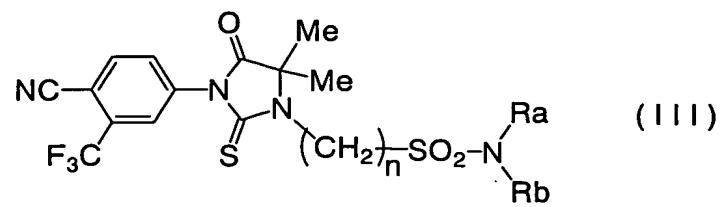


15

wherein n, Ra, Rb and R<sub>c</sub> are as defined in claim 11.

[13] A compound represented by formula (III):

[Formula 6]



wherein n, Ra and Rb are as defined in claim 11.